

REMARKS

Applicants thank the Examiner for the thorough consideration given the present application.

Claims 1, 3-8, 10, and 11 are now present in this application. Claims 1, 5, 10 and 11 are independent. Claims 2 and 9 are canceled and claims 1, 5 and 10 are amended. Reconsideration of this application is respectfully requested.

Priority Under 35 U.S.C. § 119

Applicants thank the Examiner for acknowledging Applicants' claim for foreign priority under 35 U.S.C. § 119, and receipt of the certified priority document.

Information Disclosure Citation

Applicants thank the Examiner for considering the references supplied with the Information Disclosure Statements filed June 9, 2005 and December 6, 2006, and for providing Applicants with initialed copies of the PTO-SB08 forms filed therewith.

Objection to the Drawings

The Examiner has objected to the drawings because Figure 1 was not labeled Prior Art.

In order to overcome this objection, Applicants are concurrently submitting Replacement Drawing Sheets for the Examiner's approval, which address each of the deficiencies pointed out by the Examiner. Accordingly, reconsideration and withdrawal of this objection are respectfully requested.

Rejection Under 35 U.S.C. § 102

Claims 1-11 stand rejected under 35 U.S.C. § 102(b) as being anticipated by US 6,289,680 (Oh et al.). This rejection is respectfully traversed.

A complete discussion of the Examiner's rejection is set forth in the Office Action, and is not being repeated here.

While not conceding the appropriateness of the Examiner's rejection, but merely to advance prosecution of the instant application, Applicants respectfully submit that independent claim 1 has been amended to recite a combination of elements in an operation control apparatus including a current detecting unit for detecting current applied to an interior motor of the compressor, a voltage detecting unit for detecting voltage applied to the interior motor of the compressor, an operation control apparatus for a compressor with a stroke estimating unit for estimating a stroke of the compressor on the basis of the current and the voltage and a motor constant of the interior motor. A control unit generates a control signal for varying a stroke of the compressor on the basis of the estimated stroke value and a preset stroke reference value. A current control means varies a stroke voltage applied to the interior motor of the compressor in accordance with the control signal, and an OLP (over load protector) and/or a PTC thermistor (positive temperature coefficient thermistor) are not used for the operation control apparatus.

Claim 5 has been amended to recite a combination of elements in an operation control apparatus including a current detecting unit for detecting current applied to the compressor, a voltage detecting unit for detecting voltage applied to the compressor, an operation control apparatus for a compressor including detecting means for detecting a current and a voltage applied to a compressor and a storing means for presetting a standard current value for preventing an overcurrent generated when the compressor initially starts, and storing the set standard current value. A comparing means compares the detected current value and the standard current value, and outputs a comparing signal corresponding to the comparing result. A control means cuts off a current applied to the compressor by turning off a current control means installed at the compressor by the comparing result, or controls a stroke voltage applied to the compressor by turning on/off the current control means at a certain period, and an OLP (over load protector) and/or a PTC thermistor (positive temperature coefficient thermistor) are not used for the operation control apparatus.

Claim 10 recites a method for controlling an operation of a compressor including the steps of detecting a current and a voltage applied to the compressor and estimating a stroke of the compressor on the basis of the detected values of the current and the voltage and a motor constant of an interior motor of the compressor. When the estimated stroke value is smaller than

a preset stroke reference value, a voltage applied to the compressor is increased by lengthening an on/off period of a current control means installed at the compressor, and when the estimated stroke value is greater than a preset stroke reference value, a voltage applied to the compressor is decreased by shortening the on/off period of the current control means.

Claim 11 recites a method for controlling an operation of a compressor including detecting a current applied to the compressor and comparing the detected current value and a preset standard current value and cutting off a current applied to the compressor by turning off a current control means installed at the compressor when the detected current value is greater than the standard current value and when the detected current value is the same as or smaller than the standard current value, estimating a stroke of the compressor, and controlling a stroke voltage applied to the compressor by turning on/off the current control means at a certain period on the basis of the estimated value and the preset stroke standard current value.

The invention provides an operation control apparatus and method for a compressor to protect the compressor from being overloaded by using a current control device instead of a PTC thermistor and/or an OLP. Each of these claims uses the current applied to the compressor for the stroke estimator. Claims 1 and 5 now recite a current detecting unit and a voltage detecting unit. Both claims 10 and 11 recite the step of detecting a current applied to the compressor and claim 10 additionally recites detecting the voltage applied to the compressor.

In contrast thereto, Oh et al. discloses an apparatus for controlling a linear compressor to detect an unstable phenomenon caused by deviation of parts of the compressor and corrects a reference stroke if any unstable phenomenon occurs. The device uses a stroke estimator 32 using voltages V_0 - V_4 , which are the voltage V_0 between the current sensing resistance R and the power supply voltage terminal, the voltage V_1 between the current sensing resistance R and the triac Tr, the voltage V_2 supplied from the triac Tr to the linear oscillating motor 10, the voltage V_3 supplied to the linear oscillating motor 10 through the capacitor C and V_4 , the voltage from the power supply voltage terminal before passing the capacitor C (See col. 9, lines 31-43). There is no teaching or suggestion of using the current applied to the compressor in the stroke estimator. Therefore, there is no current detecting unit as recited in amended claims 1 and 5 nor a step of detecting a current as recited in claims 10 and 11, disclosed by the prior art, including Oh et al.

Applicants respectfully submit that the combinations of elements and steps as set forth in independent claims 1, 5, 10 and 11 are not disclosed or made obvious by the prior art of record, including Oh et al., for the reasons explained above. Accordingly, reconsideration and withdrawal of this rejection are respectfully requested.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance.

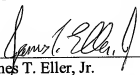
If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Chris McDonald, Registration No. 41,533, at (703) 205-8000, in the Washington, D.C. area.

Prompt and favorable consideration of this Amendment is respectfully requested.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

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Respectfully submitted,

By 
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Attachments